regarding RF exposure limits.[439] The subscriber antennas to be used are very small and can be mounted in a variety of places at a subscriber location. Generally, we expect these antennas to be mounted so that neither subscribers nor passersby venture into their transmit beams, because a person will block the signal and interrupt the transmissions between the hub and subscriber transceivers. Moreover, it is anticipated that LMDS subscriber equipment will be installed by professional personnel, thereby minimizing the possibility that subscribers or passersby will intercept the transceiver signal.

295. We believe it is incumbent upon LMDS licensees to exercise reasonable care to protect users and the public from the operation of LMDS transceivers. Since the Commission has not specifically addressed RF emissions guidelines for this kind of equipment, we believe that requiring licensees to provide user and installation information, and to label subscriber antennas properly, provides adequate notice regarding the potential safety hazards of LMDS subscriber transceivers. We will therefore require LMDS licensees to attach labels to every antenna, in a conspicuous fashion. Such labels should include reference to the Commission guidelines that apply. In addition, we expect LMDS licensees to include a full explanation of the labels that appear on their antennas, as well as reference to the applicable Commission guidelines in the instruction manuals and other information accompanying their subscriber transceivers. For example, this information should include advice as to minimum separation distances required between users and radiating antennas to meet the Commission's exposure guidelines. While we will require LMDS licensees to attach labels and provide users with notice of radiation hazards, we will not mandate the specific language to be used. However, we will require use of the ANSI-specified warning symbol for RF exposure.[440]

296. Although we have declined to require interlock features,[441] we recognize that such features could enhance the safety of LMDS subscriber transceivers. For example, such a feature could reduce or terminate transmitting power if someone were to block the antenna's close-in main beam. Thus, we strongly encourage the use of safety interlock features on the subscriber units to the extent that such features can be made available at a reasonable cost. We expect LMDS licensees to act in good faith, and to work with all interested parties, to achieve the protection intended. If, in the future, we find that the requirements and procedures we adopt today do not provide adequate protection from RF emissions to subscribers and the general public, we may revisit the issue of ensuring adequate safeguards.

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[439] *RF Guidelines Report and Order*, 11 FCC Rcd at 15124, 15152 (paras. 1, 75). *See also* Section 1.1307(b)(1) of the Commission's Rules, 47 CFR § 1.1307(b)(1).

[440] "American National Standard Radio Frequency Radiation Hazard Warning Symbol," ANSI C95.2-1982, Copyright 1982 by the Institute of Electrical and Electronics Engineers, Inc.

[441] See para. 281, *supra*.

5. Spectral Efficiency

a. Background; Comments

297. In the *Third NPRM* we sought comment on whether a spectral efficiency standard is necessary and suggested that, if a standard is necessary, the minimum equipment performance be 1 bps/Hz for digital modulated systems. We also asked if there is a better gauge of spectral efficiency that would minimize enforcement concerns for the Commission.[442]

298. BellSouth and TI concur with our proposal to establish a spectral efficiency of 1 bps/Hz for digital modulated LMDS equipment. They do not believe this standard would be an administrative burden, and they argue that it would be an adequate gauge of equipment efficiency.[443] NASA argues that the proposal is outdated because more advanced modulation techniques have made efficiency levels of 7 bps/Hz achievable. Nevertheless, taking a more practical view, it suggests that the standard be set at 4 bps/Hz, since this efficiency is consistent with 32-level or higher QAM schemes and should pose no problem to equipment manufacturers.[444]

299. Several commenters, such as CellularVision, ComTech, and GEC, argue that a spectral efficiency standard is unnecessary because of our intent to auction LMDS spectrum. They contend that when licensees acquire spectrum via auctions, they have an economic incentive to make the optimal tradeoff between equipment cost and spectral efficiency. In addition, these commenters contend, multiple access schemes and frequency reuse efficiency of LMDS are much more significant factors in considering overall spectral efficiency than modulation efficiency.[445] Additionally, ComTech argues that use of efficiency standards adopted in the Private Land Mobile Radio Services (''PLMRS'') refarming proceeding is inappropriate because those standards are not developed for LMDS system architecture. ComTech states that, unlike PLMRS, which generally employs frequencies only once in a metropolitan area, LMDS supports many separate reuses of spectrum within a given area. With modulation efficiency equalling PLMRS, ComTech concludes that LMDS would have a ''spectral efficiency'' measured over a given area that is 50 or more times that of PLMRS.

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442 *Third NPRM,* 11 FCC Rcd at 98-99 (para. 124).

443 BellSouth Comments to *Third NPRM* at 13; TI Comments to *Third NPRM* at 24.

444 NASA Comments to *Third NPRM* at 22.

445 CellularVision Comments to *Third NPRM* at 30-31; ComTech Comments to *Third NPRM* at 11; GEC Comments to *Third NPRM* at 6.

Thus, ComTech argues, no standard is needed, and if any is promulgated, it should be one that characterizes the true efficiency employed by LMDS.[446]

300. GEC maintains that power amplifier devices are not available that can deliver the linearity required for NASA's suggested modulation and spectral efficiency of 4 bps/Hz. Therefore, GEC suggests that the Commission not require a spectral efficiency level beyond that of analog delivery.[447] CellularVision reiterates its earlier position that if the spectrum is to be auctioned, there is no need for a spectral efficiency standard. Nevertheless, if there must be one, it recommends 1.0 bps/Hz as a minimum.[448]

b. Decision

301. We decline to adopt the 1.0 bps/Hz transmitter spectral efficiency standard. In the *Third NPRM* we recognized that modulation techniques have advanced over this period and will continue to do so. Furthermore, we agree with commenters that auctions are an effective means of guaranteeing that optimum efficiency will be achieved in the use of spectrum by LMDS licensees. Carriers who have invested in their acquisition of LMDS licenses have an incentive to utilize the spectrum in the manner that best ensures a return on their investment, and a component of this utilization is likely to involve the licensees' pursuit of spectral efficiencies. We note, however, that this assessment by licensees will involve balancing between equipment costs and attainable levels of spectral efficiency. We believe that it is sound public policy to provide equipment manufacturers and licensees sufficient flexibility to design and install equipment that best meets the service needs of the customers.

D. Competitive Bidding Rules and Procedures

1. Use of Competitive Bidding

a. Background; Comments

302. Section 309(j) of the Communications Act gives the Commission auction authority over services where mutually exclusive applications for initial licenses or construction permits are accepted for filing.[449] Additionally, Section 309(j) requires that the principal use of the spectrum to be auctioned will involve or is reasonably likely to involve

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[446] ComTech Comments to *Third NPRM* at 12.

[447] GEC Reply Comments to *Third NPRM* at 2-3.

[448] CellularVision Reply Comments to *Third NPRM* at 34.

[449] 47 U.S.C. § 309(j).

the provision of subscription-based communications services.[450] In the *Third NPRM* we stated our belief that LMDS spectrum meets these requirements and tentatively concluded that use of competitive bidding to award LMDS licenses will promote the objectives described in Section 309(j)(3) of the Communications Act.[451]

303. Most commenters support auctioning LMDS spectrum.[452] M3ITC, however, disagrees with the Commission's proposal to auction LMDS licenses, and proposes the use of lotteries.[453] In opposing the use of auctions for LMDS spectrum, M3ITC expresses concern that small businesses may lack the financial ability to participate in the auction, particularly in the major markets. It suggests the imposition of a royalty or other fee on lottery winners to generate revenue in lieu of auctions.[454] PTV advocates a set-aside of 150 megahertz of LMDS spectrum for educational uses. It states that if a 150 megahertz band is reserved for noncommercial use, auctions should not be used to award licenses in this band.[455] As an alternative to a set-aside, PTV proposes that the Commission require LMDS licensees to provide access to a limited number of channels or a percentage of capacity to non-commercial entities at no charge or at preferential rates.[456]

b. Decision

304. We conclude that auctioning LMDS licenses would further the Communications Act's objectives. First, based on our previous experience in conducting auctions for other services, we believe that use of competitive bidding to award LMDS licenses, as compared with other licensing methods, would speed the development and deployment of this new

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[450] *Id.*

[451] *Third NPRM*, 11 FCC Rcd at 125 (para. 129); 47 U.S.C. § 309(j)(3).

[452] *See, e.g.*, CellularVision Comments to *Third NPRM* at 32; TI Comments to *Third NPRM* at 24; Joint Parties Comments to *Third NPRM* at 2; LMC Comments to *Third NPRM* at 4.

[453] M3ITC Comments to *Third NPRM* at 6.

[454] *Id.*

[455] PTV Comments to *Third NPRM* at 4. In the *First NPRM* we solicited comment on the advisability of setting aside a portion of the available 28 GHz band for educational use. *See First NPRM*, 8 FCC Rcd at 560 (para. 19, n.6).

[456] *See* PTV Comments to *Third NPRM* at 11, 12. *See also* PTV Comments to *Fourth NPRM* at 3; PTV Reply Comments to *Fourth NPRM* at 2. Several other commenters favor the use of LMDS spectrum for educational and other non-commercial uses. *See* NTIA *Ex Parte* Comments to *Fourth NPRM* at 1; RioVision Comments to *First NPRM* at 2, 3; Suite 12 Group Comments to *First NPRM* at 10-16.

technology, products and services to the public with minimal administrative or judicial delay, and would encourage efficient use of the spectrum as required by Sections 309(j)(3)(A) and 309(j)(3)(D).[457] Second, auctions meet the objectives of Section 309(j)(3)(B) because we are adopting competitive bidding rules that foster economic opportunity and the distribution of licenses among a wide variety of applicants, including small businesses.[458]

305. We also have determined that use of auctions to assign LMDS licenses will advance the goals of Section 309(j)(3)(C) by enabling the public to recover a portion of the value of the public spectrum.[459] If we use a licensing methodology that ensures that licenses are assigned to those who value them most highly, it follows that such licensees can be expected to make the most efficient and intensive use of the spectrum. Because LMDS is eligible for competitive bidding under the statutory requirements set forth in Section 309(j)(2)(A), we are precluded from using lotteries to award LMDS licenses.[460] Accordingly, we reject M3ITC's suggestion that we use lotteries to award LMDS licenses. Moreover, as discussed *infra*, we believe that M3ITC's concerns regarding small business participation are addressed by the special provisions we adopt today for small businesses participating in LMDS auctions.[461]

306. Finally, with respect to PTV's argument for a set-aside of LMDS spectrum for educational purposes, we decline at this time to adopt this specific proposal. While we are not adopting public interest programming obligations at this time, we reserve the right to do so on LMDS providers who provide video services. Licensees are specifically on notice that the Commission may adopt public interest requirements at a later date. If public interest obligations are found to be warranted, one option would be to adopt rules similar to those Congress enacted for DBS providers, including a 4 percent to 7 percent set-aside of capacity for non-commercial educational and informational programming.[462] Another option would be to hold LMDS licensees to a ''promise *versus* performance'' type standard.

2. Competitive Bidding Issues

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[457] 47 U.S.C. § 309(j)(3)(A),(D).

[458] 47 U.S.C. § 309(j)(3)(B).

[459] 47 U.S.C. § 309(j)(3)(C).

[460] 47 U.S.C. § 309(i)(1)(B).

[461] See paras. 340-363, *infra*.

[462] *See* Section 335 of the Communications Act, 47 U.S.C. § 335.

a. Competitive Bidding Design for LMDS Licenses

(1) Background; Comments

307. In the *Third NPRM*, we tentatively concluded that we would use simultaneous multiple round auctions to award LMDS licenses, and that we would not use combinatorial bidding in LMDS licensing. We also proposed to award all LMDS licenses together in one simultaneous multiple round auction because of the expected value and significant interdependence of the licenses sought.[463]

308. In its comments, TI supports the use of simultaneous multiple round bidding because of the degree of interdependence among LMDS licenses.[464] WCA and CellularVision also support the use of simultaneous multiple round bidding.[465] ComTech believes that the Commission should not employ combinatorial bidding on the basis that it would be difficult for small operators to determine the likelihood of winning any particular market.[466] No comments were filed regarding our proposal to group all LMDS licenses together in one auction.

(2) Decision

309. Based on the record in this proceeding and our successful experience conducting simultaneous multiple round auctions for other services, we believe a simultaneous multiple round auction is the most appropriate competitive bidding design for LMDS. First, for certain bidders, the value of these licenses will be significantly interdependent because of the desirability of aggregation across geographic regions. Simultaneous multiple round bidding will generate more information about license values during the course of the auction, and provide bidders with more flexibility to pursue back-up strategies, than auctioning licenses separately. Simultaneous multiple round bidding therefore is most likely to award licenses to the bidders who value them the most highly and to provide bidders with the greatest likelihood of obtaining the license combinations that best satisfy their service needs. We currently do not have the operational capability to use combinatorial bidding but will consider doing so in future auctions.

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[463] *Third NPRM*, 11 FCC Rcd at 104-05 (para. 141).

[464] TI Comments to *Third NPRM* at 24.

[465] WCA Comments to *Third NPRM* at 6; CellularVision Comments to *Third NPRM* at 32.

[466] ComTech Comments to *Third NPRM* at 12.

310. We will conduct simultaneous auctions of two licenses in each of 492 BTAs for LMDS, for a total of 984 licenses. Each BTA will have one license consisting of 1,150 megahertz: 1,000 megahertz in the 28 GHz band (27.5-28.35 GHz and 29.1-29.25 GHz) and 150 megahertz in the 31 GHz band (31.075 GHz-31.225 GHz); and a second license consisting of 150 megahertz in the 31 GHz band (31.0-31.075 GHz and 31.225-31.399 GHz) will be auctioned concurrently. As mentioned above, we will not include the New York BTA at this time in the licensing process because of the outstanding issues connected with the CellularVision pioneer preference request.

b. LMDS Bidding Procedures

311. In the *Third NPRM* we proposed to use simultaneous multiple round competitive bidding procedures similar to those used for broadband PCS.[467] Accordingly, we will use the competitive bidding procedures of Part 1, Subpart Q, for LMDS with modifications as indicated below.

(1) Bid Increments and Tie Bids

312. In the *Third NPRM*, we stated that in simultaneous multiple round auctions it is important to specify minimum bid increments to speed the progress of the auction and help ensure that the auction closes within a reasonable period of time.[468] In the *Competitive Bidding Second Report and Order*, we reserved the right to specify minimum bid increments in dollar terms as well as in percentage terms.[469] This approach ensures a timely completion of the auction even if bidding begins at a very low dollar amount. The *Third NPRM*, therefore, proposed a minimum bid increment equal to some percentage of the high bid from the previous round or a dollar amount per "MHz-pop" or "bidding unit," whichever is greater.[470] The number of "MHz-pops" is calculated by multiplying the population of the

[467] *Third NPRM*, 11 FCC Rcd at 107 (para. 148). *See also* Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 93-253, Fifth Report and Order, 9 FCC Rcd 5532 (1994) (*Competitive Bidding Fifth Report and Order*), *recon. granted in part*, Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 93-253, Fifth Memorandum Opinion and Order, 10 FCC Rcd 403 (1995) (*Competitive Bidding Fifth Memorandum Opinion and Order*); Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, Sixth Report and Order, PP Docket No. 93-253, 11 FCC Rcd 136 (1995) (*Competitive Bidding Sixth Report and Order*); *Broadband PCS Report and Order*.

[468] *Third NPRM*, 11 FCC Rcd at 107 (para. 149).

[469] *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2369 (para. 126).

[470] *Third NPRM*, 11 FCC Rcd at 107 (para. 149).

service area by the amount of spectrum authorized by the license. We proposed to announce by Public Notice prior to auction the specific bid increment that generally will be used, and to retain the discretion to set and vary the minimum bid increments for individual licenses or groups of licenses over the course of an auction. Finally, where a tie bid occurs, we proposed to determine the high bidder by the order in which we received the bids.[471]

313. No commenters disagreed with our general proposal to establish minimum bid increments and our proposal for determining the winner between two tie bids. However, ComTech requests that the Commission ensure that bid deposits, bid increments, and other monetary amounts that have been calculated based on MHz-pops in previous auctions should reflect the fact that only one license covering 1 gigahertz is issued per service area. ComTech also requests that we use the number of households in such calculations in lieu of the population of the service area.[472]

314. We will follow the practice that we have used for other auctions and announce by Public Notice prior to the LMDS auction the general guidelines for bid increments.[473] We retain the discretion to set and, by announcement before or during the auction, vary the minimum bid increments for individual licenses or groups of licenses. Where a tie bid occurs, we will determine the high bidder by the order in which the Commission received the bids.[474] We address ComTech's proposal in our discussion below of upfront payments.[475] To allow for the flexibility to deal with this proposal, we retain the discretion to vary both absolute and percentage bid increments for specific licenses.

(2) Stopping Rules

315. When simultaneous multiple round auctions are used, a stopping rule must be established for determining when the auction is over. In the *Third NPRM*, we proposed a simultaneous stopping rule in which bidding generally remains open on all licenses until there

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471 *Id.*

472 ComTech Comments to *Third NPRM* at 13.

473 Auction rules for 900 MHz SMR and MDS use this flexible approach for setting bid increments. *See* 47 CFR § 90.803(c) and 47 CFR § 21.951(2)(iv), respectively.

474 *See Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2369 (para. 126).

475 See paras. 328-330, *infra*.

is no new acceptable bid on any license.[476] No specific comments were filed in response to this proposal.

316. We will adopt a simultaneous stopping rule for LMDS. The auction will close after one round passes in which no new valid bids, proactive activity rule waivers (as defined at paragraphs 319 through 326, *infra*), or bid withdrawals are submitted. We will retain the discretion, however, to keep the auction open even if no new valid bids, proactive waivers, or bid withdrawals are submitted. In the event that this discretion is exercised, the effect will be the same as if a bidder had submitted a proactive waiver.[477] This will help ensure that the auction is completed within a reasonable period of time, because it will enable the Commission to utilize larger bid increments, which speed the pace of the auction, without risking premature closing of the auction. Since we also impose an activity rule (as discussed *infra*), we believe that simultaneous closing for all licenses will afford bidders flexibility to pursue back-up strategies without running the risk that bidders will hold back their bidding until the final rounds. In addition, we retain the discretion to declare after forty rounds that the auction will end after some specified number of additional rounds. If this option is used, we will accept bids only on licenses where the high bid has increased in at least one of the last three rounds.

(3) Duration of Bidding Rounds

317. We proposed in the *Third NPRM* to reserve the discretion to vary the duration of the bidding rounds or the interval at which bids are accepted.[478] No specific comments were filed in response to this proposal. Because in simultaneous multiple round auctions bidders may need a significant amount of time to evaluate back-up strategies and develop their bidding plans, we reserve the discretion to vary the duration and frequency of bidding rounds. We will announce any changes to the duration of rounds and intervals between bidding either by Public Notice prior to the auction or by announcement during the auction.

(4) Bid Withdrawals

318. In the *Third NPRM*, we proposed to permit a high bidder to withdraw one or more of its high bids during the bid withdrawal period in each round subject to the bid

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[476] *Third NPRM*, 11 FCC Rcd at 108 (para. 153).

[477] See para. 325, *infra*. *See also* Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 93-253, Memorandum Opinion and Order, 9 FCC Rcd 7684-85 (1994).

[478] *Third NPRM*, 11 FCC Rcd at 109 (para. 155).

withdrawal payments specified below.[479] The only comment on this proposal was WCA's suggestion that we restructure our bid withdrawal provisions if we decided to award more than one license per geographic service area.[480] Because we are awarding two licenses of different size (1,150 megahertz and 150 megahertz) per geographic area, we find it unnecessary to address the merits of WCA's alternative proposal, which was predicated on the assumption that we would award two LMDS licenses of equal size (450 megahertz each). We will not make use of a bid withdrawal period within each round as we have in previous auctions, but will permit a high bidder to withdraw the high bid from a previous round subject to the bid withdrawal payments discussed below.[481] If a high bid is withdrawn (and not bid upon in the same round), the license will be offered in the next round at the second highest bid price. We may at our discretion adjust the offer price in subsequent rounds until a valid bid is received on the license. In addition, to prevent a bidder from strategically delaying the close of the auction, we retain the discretion to limit the number of times that a bidder may re-bid on a license from which it has withdrawn a high bid.

(5) Activity Rules

319. In the *Competitive Bidding Second Report and Order*, we adopted the Milgrom-Wilson activity rule as our preferred activity rule where a simultaneous stopping rule is used.[482] The Milgrom-Wilson approach encourages bidders to participate in early rounds by limiting their maximum participation to some multiple of their minimum participation level. In the *Third NPRM*, we tentatively concluded that the Milgrom-Wilson activity rule should be used in conjunction with the proposed simultaneous stopping rule for LMDS auctions.[483] We believed that the Milgrom-Wilson approach would best achieve the Commission's goals of affording bidders flexibility to pursue back-up strategies, while at the same time ensuring that simultaneous auctions are concluded within a reasonable period of time.[484]

320. In its comments, ComTech urges the Commission to adopt bidder activity rules that assume only one license covering 1 gigahertz of spectrum for each service area and

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[479] *Id.* at 109 (para. 156). See paras. 333-336, *infra*.

[480] WCA Comments to *Third NPRM* at 6-7.

[481] See paras. 333-336, *infra*.

[482] *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2372-73 (para. 144).

[483] *Third NPRM*, 11 FCC Rcd at 109-12 (paras. 157-165).

[484] *Id.*

which establish the number of households covered as the activity criterion. That is, bidders would declare their eligibility solely in terms of households.[485]

321. For LMDS auctions, we will use the Milgrom-Wilson activity rule with some variations. Milgrom and Wilson divide the auction into three stages. We will set, by announcement before the auction, the minimum required activity levels for each stage of the auction. We retain the discretion to set and, by announcement before or during the auction, vary the required minimum activity levels (and associated eligibility calculations) for each auction stage. Retaining this flexibility will improve our ability to control the pace of the auction and help ensure that the auction is completed within a reasonable period of time.

322. For the LMDS auctions, we will use the following transition guidelines: The auction will begin in Stage One and will generally move from Stage One to Stage Two and from Stage Two to Stage Three when the auction activity level is below ten percent for three consecutive rounds. Under no circumstances can the auction revert to an earlier stage. However, we retain the discretion to determine and announce during the course of an auction when, and whether, to move from one auction stage to the next, based on a variety of measures of bidder activity, including, but not limited to, the auction activity level as defined above, the percentage of licenses (measured in terms of bidding units) on which there are new bids, the number of new bids, and the percentage increase in revenue.

323. To avoid the consequences of clerical errors and to compensate for unusual circumstances that might delay a bidder's bid preparation or submission in a particular round, we will provide bidders with a limited number of waivers of the above-described activity rule. We believe that some waiver procedure is needed because we do not wish to reduce a bidder's eligibility due to an accidental act or circumstances not under the bidder's control.[486]

324. We will provide bidders with five activity rule waivers that may be used in any round during the course of the auction.[487] If a bidder's activity is below the required activity level, a waiver will be applied automatically. That is, for example, if a bidder fails to submit a bid in a round, and its activity from any standing high bids (that is, high bids at the end of the previous round) falls below its required activity level, a waiver will be automatically applied. A waiver will preserve current eligibility in the next round.[488] An activity rule waiver applies to an entire round of bidding and not to a particular BTA service area. Initial

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[485] ComTech Comments to *Third NPRM* at 13.

[486] *See Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2373 (para. 145).

[487] *Id.* at 2373 (para. 146).

[488] However, an activity rule waiver cannot be used to correct an error in the amount bid.

eligibility is determined by the amount of the upfront payment received and the licenses identified in the applicant's FCC Form 175, which are discussed below.

325. Bidders will be afforded an opportunity to override the automatic waiver mechanism when they place a bid if they intentionally wish to reduce their bidding eligibility and do not want to use a waiver to retain their eligibility at its current level.[489] If a bidder overrides the automatic waiver mechanism, its eligibility will be permanently reduced, and it will not be permitted to regain its bidding eligibility from a previous round. An automatic waiver invoked in a round in which there are no new valid bids will not keep the auction open. Bidders will have the option of entering a proactive activity rule waiver during any round.[490] If a bidder submits a proactive waiver in a round in which no other bidding activity occurs, the auction will remain open.

326. We retain the discretion to issue additional waivers during the course of an auction for circumstances beyond a bidder's control. We also retain the flexibility to adjust by Public Notice prior to an auction the number of waivers permitted, or to institute a rule that allows one waiver during a specified number of bidding rounds or during specified stages of the auction.[491]

c. Procedural and Payment Issues

327. In the *Competitive Bidding Second Report and Order*, as modified by the *Competitive Bidding Second Memorandum Opinion and Order*, we established general procedural and payment rules for auctions, but also stated that such rules may be modified on a service-specific basis.[492] We will generally follow the procedural and payment rules established in Subpart Q of Part 1 of the Commission's Rules. Any service-specific modifications based on the particular characteristics of LMDS will be set forth by Public Notice by the Wireless Telecommunications Bureau.

(1) Upfront Payments

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[489] *See Competitive Bidding Fourth Memorandum Opinion and Order*, 9 FCC Rcd at 6861 (paras. 8-15).

[490] Thus, a "proactive" waiver, as distinguished from the automatic waiver described above, is one requested by the bidder.

[491] *See Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2373 (para. 145).

[492] Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 93-253, Second Memorandum Opinion and Order, 9 FCC Rcd 7245, 7249-50 (para. 12) (1994) (*Competitive Bidding Second Memorandum Opinion and Order*).

328. The *Third NPRM* proposed to require participants in LMDS auctions to tender to the Commission a substantial upfront payment.[493] We stated in the *Competitive Bidding Second Report and Order* that as a general rule we will base upfront payments on a formula of $0.02 per MHz-pop for the largest combination of MHz-pops a bidder anticipates being active on in any single round of bidding. We have varied our upfront payments for certain services.[494] We generally, however, follow a formula of multiplying the population of the license service area by the amount of spectrum authorized by the license to determine MHz-pops and then multiplying that amount by a dollar figure.

329. In support of our proposal, CellularVision states that a substantial upfront payment "should ensure that the process of licensing LMDS nationwide is not encumbered by frivolous bidders."[495] CellularVision and ComTech, however, object to our proposal to base the minimum bid on a dollar amount per MHz-pop. CellularVision argues that the $0.02 per MHz-pop formula used in the PCS context is not appropriate for LMDS.[496] Stating that the PCS formula was designed to represent approximately five percent of the expected value of PCS licenses, CellularVision points out that a 1000 megahertz LMDS license would represent about 33 times more spectrum than the largest PCS license.[497] Using the PCS formula, the upfront payment for a BTA with one million pops would be $20 million; for the whole Nation, it would be $5 billion. Accordingly, CellularVision argues that the Commission should use a formula far lower than the PCS model of $0.02 per MHz-pop.[498] ComTech proposes that the Commission use a bid deposit of $0.08 per household and adjust the remaining auction rules accordingly.[499] ComTech notes that initial bid deposits of $0.08 per household would still exceed the initial deposits in the PCS proceedings, while keeping the barriers to entry low.[500]

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[493] *Third NPRM*, 11 FCC Rcd at 113 (para. 167).

[494] For example, entrepreneurs bidding for C block licenses paid upfront payments of $0.15 per MHz-pop. 47 CFR § 24.711(a)(1).

[495] CellularVision Comments to *Third NPRM* at 33.

[496] *Id.* at 33-34.

[497] *Id.*

[498] *Id.*

[499] ComTech Comments to *Third NPRM* at 13.

[500] *Id. See also Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2379 (paras. 180-187).

330. We recognize that for purposes of LMDS the formula of $0.02 per MHz-pop can yield very high upfront payments given the amount of spectrum offered in each service area. Rather than completely abandon our general formula for purposes of LMDS, we believe that the concerns of CellularVision and ComTech may be alleviated by lowering the $0.02 per MHz-pop used to calculate the payment. We therefore delegate authority to the Chief, Wireless Telecommunications Bureau ("Bureau"), to determine an appropriate calculation for the upfront payment, which the Bureau will announce by Public Notice.[501] In calculating the upfront payment, the Bureau should take into consideration the value of similar spectrum.

(2) Down Payments, Long-Form Applications, and Payment in Full

331. The *Third NPRM* proposed a 20 percent down payment for winning bidders in LMDS auctions.[502] No comments were filed on this specific proposal.

332. We will require all winning bidders in LMDS auctions to supplement their upfront payments with a down payment sufficient to bring their total deposits up to 20 percent of their winning bid(s). Winning bidders, except for small businesses and businesses with annual gross revenues between $40 million and $75 million, will be required to submit this payment by wire transfer to our lock-box bank within ten (10) business days following release of a public notice announcing the close of bidding and high bidders.[503] Winning bidders will also be required to file a long-form application within ten (10) business days of the announcement of the high bidders. If, pursuant to Section 309(d) of the Communications Act, we dismiss or deny any and all petitions to deny filed against a long-form application, or if no petitions to deny are filed, we will issue an announcement to this effect, and the winning bidder will then have ten (10) business days to submit the balance of its winning bid, unless it qualifies for an installment payment plan.

(3) Bid Withdrawal, Default, and Disqualification Payments

[501] *See, e.g.,* Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act - Competitive Bidding, MM Docket No. 94-131, PP Docket No. 93-253, Report and Order, 10 FCC Rcd 9589, 9650 (paras. 135-142) (1995) (*Competitive Bidding MDS Report and Order*).

[502] *Third NPRM,* 11 Rcd at 113-14 (para. 169).

[503] See para. 354, *infra,* for payment deadlines for small businesses and those with annual gross revenues of more than $40 million and not more than $75 million.

333. As we discussed in the *Competitive Bidding Second Report and Order*, it is important to the success of our system of competitive bidding that potential bidders understand that there will be a substantial payment assessed if they withdraw a high bid, are found not to be qualified to hold licenses, or default on payment of a balance due.[504] In the *Third NPRM*, we proposed to use the bid withdrawal, default and disqualification rules set forth in Sections 1.2104(g) and 1.2109 of the Commission's Rules for LMDS auctions.[505] No specific comments were received on this proposal.

334. For the LMDS auctions, we adopt the bid withdrawal, default and disqualification rules contained in Sections 1.2104(g) and 1.2109 of the Commission's Rules.[506] If a license is re-offered by auction, the ''winning bid'' refers to the high bid in the auction in which the license is re-offered. If a license is re-offered in the same auction, the winning bid refers to the high bid amount, made subsequent to the withdrawal, in that auction. If the subsequent high bidder also withdraws its bid, that bidder will be required to pay an amount equal to the difference between its withdrawn bid and the amount of the subsequent winning bid the next time the license is offered by the Commission. If a license that is the subject of withdrawal or default is not re-auctioned, but is instead offered to the highest losing bidders in the initial auction, the ''winning bid'' refers to the bid of the highest bidder who accepts the offer.

335. If a bidder has withdrawn a bid or defaulted on one or more licenses but the amount of the withdrawal or default payment cannot yet be determined, the bidder will be required to make a deposit of up to 20 percent of the amount bid on such licenses. When it becomes possible to calculate and assess the withdrawal or default payment, any excess deposit will be refunded. Upfront payments will be applied to such deposits and to bid withdrawal and default payments due before being applied toward the bidder's down payment on licenses the bidder has won and seeks to acquire.

336. In addition, if a default or disqualification involves gross misconduct, misrepresentation or bad faith by an applicant, we retain the option to declare the applicant and its principals ineligible to bid in future auctions, or take any other action we deem

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[504] *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2382 (paras. 197-205).

[505] *Third NPRM*, 11 Rcd at 114-15 (paras. 170, 171).

[506] *See* 47 CFR §§ 1.2104(g), 1.2109. We recently addressed the issue of how our bid withdrawal provisions apply to bids that are mistakenly placed and withdrawn in a decision involving the 900 MHz SMR and broadband PCS C block auctions. *See* Atlanta Trunking Associates, Inc. and MAP Wireless L.L.C. Request To Waive Bid Withdrawal Payment Provisions, FCC 96-203, Order (released May 3, 1996) (summarized in 61 Fed. Reg. 25,807 (May 23, 1996)), *recon. pending*.

necessary, including institution of proceedings to revoke any existing licenses held by the applicant.[507]

d. Regulatory Safeguards

(1) Transfer Disclosure

337. The Communications Act directs us to ''require such transfer disclosures and anti-trafficking restrictions and payment schedules as may be necessary to prevent unjust enrichment as a result of the methods employed to issue licenses and permits.''[508] As we proposed in the *Third NPRM*, we will adopt the transfer disclosure requirements contained in Section 1.2111(a) of the Commission's Rules for all LMDS licenses obtained through the competitive bidding process.[509] CellularVision agrees with the Commission's proposal not to limit transfers and assignments of LMDS licenses.[510] Rules governing transfer of LMDS licenses by designated entities are discussed below.[511]

(2) Anti-Collusion Rules

338. In the *Third NPRM*, we proposed to apply the anti-collusion rules set forth in Sections 1.2105 and 1.2107 of the Commission's rules to LMDS auctions.[512] There were no comments filed on this proposal.

339. We will apply the anti-collusion rules set forth in Sections 1.2105 and 1.2107 of the Commission's Rules to LMDS auctions.[513] In addition, where specific instances of collusion in the competitive bidding process are alleged in petitions to deny, we may conduct an investigation or refer such complaints to the United States Department of Justice for investigation. Bidders who are found to have violated the antitrust laws or the Commission's rules in connection with participation in the auction process may be subject to forfeiture of

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[507] *See Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2382 (paras. 197-205).

[508] 47 U.S.C. § 309(j)(4)(E).

[509] *Third NPRM*, 11 Rcd at 115-16 (para. 172).

[510] CellularVision Comments to *Third NPRM* at 20.

[511] See paras. 350-351, 359-361, *infra*.

[512] *Third NPRM*, 11 FCC Rcd at 116-17 (para. 174).

[513] 47 CFR §§ 1.2105, 1.2107.

their down payment or their full bid amount and revocation of their license(s), and they may be prohibited from participating in future auctions.

e. Treatment of Designated Entities

(1) Overview

340. In authorizing the Commission to use competitive bidding, Congress mandated that we "ensure that small businesses, rural telephone companies, and businesses owned by members of minority groups and women are given the opportunity to participate in the provision of spectrum-based services."[514] The Communications Act requires us to "consider the use of tax certificates, bidding preferences, and other procedures" in order to achieve this Congressional goal.[515] In addition, Section 309(j)(3)(B) provides that in establishing eligibility criteria and bidding methodologies the Commission shall promote "economic opportunity and competition . . . by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women."[516] Finally, Section 309(j)(4)(A) provides that to promote these objectives, the Commission shall consider alternative payment schedules including installment payments.[517]

341. We stated in the *Third NPRM* that for services using the 28 GHz band we fully intend to meet the statutory objectives of promoting economic opportunity and competition, of avoiding excessive concentration of licenses, and of ensuring access to new and innovative technologies by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women.[518] We noted, however, that we must be cautious and deliberative in our selected approach in light of the statute's directive to avoid judicial delays[519] and the substantial legal risks involved with providing preferential treatment on the basis of race or gender. In *Adarand Constructors v. Peña*, the Supreme Court held that race-based measures must be

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[514] 47 U.S.C. § 309(j)(4)(D). These categories of applicants are collectively known as "designated entities."

[515] *Id.*

[516] 47 U.S.C. § 309(j)(3)(B).

[517] 47 U.S.C. § 309(j)(4)(A).

[518] *Third NPRM*, 11 FCC Rcd at 119-20 (para. 180).

[519] 47 U.S.C. § 309(j)(3)(A).

narrowly tailored to further a compelling government interest.[520] Gender-based measures, on the other hand, are required to meet an intermediate standard of review.[521] We sought comment on how we can best promote opportunities for businesses owned by minorities and women in the provision of LMDS and satellite services in light of constitutional requirements. We also asked commenters to supply evidence regarding past discrimination, continuing discrimination, discrimination in access to capital, underrepresentation and other significant barriers facing businesses owned by minorities and women in satellite services, services similar to LMDS, and in licensed communications services generally.

342. RioVision argues that the Commission should develop special provisions to provide designated entities with realistic opportunities to participate in the auction process, including bidding credits, installment payments, and a reduced upfront payment more favorable than that suggested in the *Third NPRM*.[522] However, neither RioVision nor other commenters provided evidence with regard to past discrimination, continuing discrimination, or other significant barriers experienced by minorities and women.

343. We remain committed to meeting the statutory objectives of promoting economic opportunity and competition, of avoiding excessive concentration of licenses, and of ensuring access to new and innovative technologies by disseminating licenses among a wide variety of applicants, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women. However, because commenters have submitted no evidence or data to support LMDS race- or gender-based auction provisions, we conclude that we do not have a sufficient record to support such special provisions at this time.[523] We

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[520] *Adarand Constructors v. Peña*, 115 S. Ct. 2097 (1995) (holding that Federal measures awarding preferential treatment on the basis of race are subject to strict scrutiny).

[521] *See* United States v. Commonwealth of Virginia, 116 S. Ct. 2264 (1996) (*VMI*). In *VMI*, the Supreme Court reviewed a State program containing gender classification and held it was unconstitutional under an intermediate scrutiny standard of review. This standard requires that "[p]arties who seek to defend gender-based government action must demonstrate an 'exceedingly persuasive justification' for that action." *Id.* at 2274 (citing J.E.B. v. Alabama, 511 U.S. 127, 136-37 & n.6 (1994) and Mississippi Univ. for Women v. Hogan, 458 U.S. 718, 724 (1982) (*Mississippi Univ. for Women*)). Under this test, the Government must show "at least that the [challenged] classification serves 'important governmental objectives and that the discriminatory means employed' are 'substantially related to the achievement of those objectives.'" *Id.* at 2275 (quoting *Mississippi Univ. for Women*, 458 S. Ct. at 724 (quoting Wengler v. Druggists Mutual Ins. Co., 446 U.S. 142, 150 (1980)).

[522] RioVision Comments to *Third NPRM* at 3.

[523] There is some evidence of discrimination that is not specifically linked to LMDS. *See Competitive Bidding Fifth Report and Order*, 9 FCC Rcd at 5542 (paras. 98-102). In this connection, we note that we have initiated a comprehensive rulemaking proceeding to explore market entry barriers to women- and minority-owned businesses as well as small businesses, pursuant to Section 257 of the Communications Act. *See* Section 257

therefore adopt installment payments and bidding credits for small businesses in LMDS auctions as detailed *infra*. We believe that these special provisions will provide small businesses with a meaningful opportunity to obtain LMDS licenses. Moreover, many minority- and women-owned entities are small businesses and will therefore qualify for these same special provisions.[524] We believe that this approach furthers the objectives of Section 309(j) of the Communications Act.

(2) Installment Payments, Upfront Payments, Down Payments, and Unjust Enrichment

344. In the *Third NPRM*, we proposed to adopt installment payments for small businesses bidding for LMDS licenses.[525] We also requested comment on the related issue of reduced upfront payments for small businesses. In the *Competitive Bidding Second Report and Order*, we concluded that a reduced down payment requirement coupled with installment payments is an effective means to address the difficulty small businesses have raising capital for spectrum licenses.[526] In the *Third NPRM*, we proposed to use this approach in the LMDS auctions, and sought comment on whether any additional or alternative special provisions should be provided for small businesses bidding on LMDS spectrum.[527]

345. To ensure that large businesses do not become the unintended beneficiaries of installment payment provisions meant for small businesses, we also proposed to make the unjust enrichment provisions adopted in the *Competitive Bidding Second Report and Order* applicable to installment payments by small business applicants.[528] In addition, we sought comment on the necessity of additional unjust enrichment provisions for LMDS licensing.[529] With respect to eligibility for installment payments, we proposed to define a small business as

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Proceeding to Identify and Eliminate Market Entry Barriers for Small Businesses, GN Docket No. 96-113, Notice of Inquiry, 11 FCC Rcd 6280 (1996) (*Market Entry Notice of Inquiry*).

[524] *See generally 1992 Survey of Minority-Owned Business Enterprises*, Dec. 11, 1995, Agriculture and Financial Statistics Division, Bureau of the Census, U.S. Department of Commerce; *1992 Survey of Women-Owned Businesses*, Jan. 29, 1996, Agriculture and Financial Statistics Division, Bureau of the Census, U.S. Department of Commerce.

[525] *Third NPRM*, 11 FCC Rcd at 121 (para. 186).

[526] *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2388-90 (paras. 229, 233, 238).

[527] *Third NPRM*, 11 FCC Rcd at 121-22 (para. 187).

[528] *Id.* at 122 (para. 188).

[529] *Id.*

an entity that, together with affiliates and attributable investors, has average gross revenues not exceeding $40 million for the three preceding years.[530]

346. In its comments, RioVision argues in favor of installment payments and reduced upfront payments for all designated entities.[531] Emc^3 and CellularVision believe that the Commission should adopt provisions for small businesses, including installment payment options.[532] CellularVision encourages the Commission to consider other measures to ensure that small businesses can compete in auctions with cable and telephone service providers, such as a small business bidding credit higher than the 25 percent used in the PCS auctions.[533] CellularVision also argues that if we use a revenue-based test to define small businesses, our proposed $40 million annual gross revenues threshold is too low for LMDS purposes because it will eliminate from eligibility small businesses that are large enough to compete against entrenched cable and telephone providers. CellularVision believes that a threshold of $100 million in annual gross revenues would be more appropriate for LMDS.[534] Emc^3 and CellularVision agree with our proposal to provide for reduced upfront payments for small business.[535]

347. CellularVision supports the proposal to place restrictions on the transfer or assignment of licenses held by designated entities, but it argues that a designated entity should be able to sell or transfer its license without restriction after the seventh year of the license term.[536] ComTech, however, strongly urges the Commission to adopt transfer rules which would relieve the transferor of any regulatory or other burdens associated with the newly created license.[537]

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530 *Id.*

531 RioVision Comments to *Third NPRM* at 3.

532 Emc^3 Comments to *Third NPRM* at 7; CellularVision Reply Comments to *Third NPRM* at 37-38.

533 CellularVision Reply Comments to *Third NPRM* at 37-38.

534 *Id.*

535 Emc^3 Comments to *Third NPRM* at 7; CellularVision Reply Comments to *Third NPRM* at 37.

536 CellularVision Comments to *Third NPRM* at 20.

537 ComTech Comments to *Third NPRM* at 8-9.

348. Substantial capital will be required to acquire and construct LMDS systems.[538] As we have previously discussed, however, it is difficult for small businesses to raise such capital.[539] In order to promote the innovation that small businesses can bring to the development of LMDS,[540] we adopt installment payments for small businesses bidding for LMDS licenses. We will define small businesses as entities that, together with controlling principals and affiliates, have average gross revenues not exceeding $40 million for the three preceding years. However, to address the concerns identified by CellularVision, we also make provision for entities with gross revenues exceeding $40 million. Broadband PCS presented a similar situation in which the considerable capital needed to bring service to the public justified special provisions for entities with financial means greater than $40 million in average gross revenues. For the broadband PCS entrepreneurs' block auctions, we therefore provided installment payments for entities with $75 million or less in gross revenues for the three preceding years.[541] We will adopt similar provisions for LMDS. We believe that low-cost government financing available through installment payment plans for such entities will promote long-term participation by more businesses which, because of their size, lack access to sufficient capital to compete with more entrenched communications providers. We believe that the high cost of LMDS and the presence of very large companies in the markets for various LMDS services make this option fully consistent with Congress's intent in enacting Section 309(j)(4)(A) to avoid a competitive bidding program that has the effect of favoring communications providers with established revenue streams over smaller entities.[542]

349. Under the rules we adopt here, installment payments will be available to applicants that, together with controlling principals and affiliates, have average gross revenues for the three preceding years of more than $40 million but not more than $75 million. Interest on their installment payments will be equal to the rate for U.S. Treasury obligations of maturity equal to the license term, fixed at the time of licensing, plus 2.5 percent. Payments of interest and principal shall be amortized over the ten years of the license term. Small businesses -- applicants that, together with controlling principals and affiliates, have average gross revenues for the three preceding years not to exceed $40 million -- will be

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[538] *See, e.g.*, CellularVision Comments to *Third NPRM* at 38; NCTA Comments to *Fourth NPRM* at 2.

[539] *See, e.g.*, *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2348 (para. 229).

[540] *See, e.g.*, M3ITC Comments to *Third NPRM* at 6 (asserting that small business entrepreneurs have been a major force in the development of new telecommunications services and products).

[541] 47 CFR § 24.711; *Competitive Bidding Fifth Report and Order*, 9 FCC Rcd at 5592 (para. 137).

[542] *See* H.R. Rep. No. 103-111, 103d Cong., 1st Sess., at 255 (Commission has authority to design alternative payment schedules so that the auction process does not inadvertently favor those with "deep pockets" over new or small companies).

eligible for installment payments at an interest rate based on the rate for U.S. Treasury obligations of maturity equal to the license term, fixed at the time of licensing, plus 2.5 percent (the same rate as that imposed on entities with $40 million to $75 million in average gross revenues). Payments for small businesses shall include interest only for the first two years and payments of interest and principal amortized over the remaining eight years of the license term. The rate of interest on ten-year U.S. Treasury obligations will be determined by taking the coupon rate of interest on the ten-year U.S. Treasury notes most recently auctioned by the Treasury Department before licenses are conditionally granted.

350. We believe it is appropriate to also adopt the unjust enrichment provisions of our broadband PCS rules in order to prevent large companies from becoming the unintended beneficiaries of these installment payment plans. We believe that these rules are preferable to our current general unjust enrichment rules governing installment payments[543] because they provide greater specificity about funds due at the time of transfer or assignment and specifically address changes in ownership that would result in loss of eligibility for installment payments, which the general rules do not address. These rules specify that applicants seeking to assign or transfer control of a license to an entity not meeting the eligibility standards for installment payments must pay not only unpaid principal as a condition of Commission approval but also any unpaid interest accrued through the date of assignment or transfer.[544]

351. Additionally, these rules provide that if a licensee utilizing installment payment financing seeks to change its ownership structure in such a way that would result in a loss of eligibility for installment payments, it must pay the unpaid principal and accrued interest as a condition of Commission approval of the change.[545] Finally, in recognition of the tiered installment payment plans offered to broadband PCS licensees, these rules provide that if a licensee seeks to make any change in ownership that would result in the licensee qualifying for a less favorable installment plan, it must seek Commission approval of such a change and adjust its payment plan to reflect its new eligibility status. A licensee, under this rule, may not switch its payment plan to a more favorable plan.[546]

352. For purposes of determining small business status, or status as a business with average annual gross revenues for the preceding three years of more than $40 million but not more than $75 million, we will attribute the gross revenues of all controlling principals in the small business applicant as well as the gross revenues of affiliates of the applicant. This is a

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[543] 47 CFR § 1.2111(c).

[544] 47 CFR § 24.716(c)(1).

[545] 47 CFR § 24.716(c)(2).

[546] 47 CFR § 24.716(c)(3).

much simpler approach than we utilized in broadband PCS because it does not require a "control group" and looks only to the gross revenues of the applicant, controlling principals of the applicant, and affiliates of the applicant. We also choose not to impose specific equity requirements on controlling principals. We will still require, however, that in order for an applicant to qualify as a small business, qualifying small business principals must maintain control of the applicant. The term "control" includes both *de facto* and *de jure* control of the applicant. Typically, *de jure* control is evidenced by ownership of 50.1 percent of an entity's voting stock. *De facto* control is determined on a case-by-case basis. An entity must demonstrate at least the following indicia of control to establish that it retains *de facto* control of the applicant: (1) the entity constitutes or appoints more than 50 percent of the board of directors or partnership management committee; (2) the entity has authority to appoint, promote, demote and fire senior executives that control the day-to-day activities of the licensees; and (3) the entity plays an integral role in all major management decisions.[547] We caution that while we are not imposing specific equity requirements on small business principals, the absence of significant equity could raise questions about whether the applicant qualifies as a *bona fide* small business.

353. We adopt a uniform upfront payment for all bidders. Our experience in previous auctions indicates that we have underestimated the value of spectrum and that upfront payments have not created a barrier to small business participation in our auctions. We believe that this action is consistent with our policy reason for requiring upfront payments -- to deter insincere and speculative bidding and to ensure that bidders have the financial capacity to build out their systems.[548]

354. With regard to reduced down payments for small businesses, our experience in previous auctions leads us to adopt a uniform 20 percent down payment provision for all bidders. We believe that this sizeable down payment will discourage insincere bidding and increase the likelihood that licenses are awarded to parties who are best able to serve the public. A 20 percent down payment should also provide us with strong assurance against default and sufficient funds to cover default payments in the unlikely event of default.[549] Small businesses and entities with average gross revenues for the preceding three years of between $40 million and $75 million will be required to supplement their upfront payments to bring their total payment to 10 percent of their winning bids within 10 business days of a

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[547] *See Competitive Bidding Fifth Memorandum Opinion and Order*, 10 FCC Rcd at 447 (para. 80). *See also* Ellis Thompson Corp., 76 Rad. Reg. (P&F) 1125, 1127-28 (1994) (where the Commission identifies factors used to determine control of a business); *see also* Intermountain Microwave, 24 Rad. Reg. (P&F) 983 (1963).

[548] *Competitive Bidding Second Report and Order*, 9 FCC Rcd at 2379 (para. 192).

[549] *See Broadband PCS Report and Order*, 11 FCC Rcd at 7830 (para. 79).

public notice announcing the close of the auction. Prior to licensing, they will be required to pay an additional 10 percent. The government will then finance the remaining 80 percent of the purchase price.

(3) Bidding Credits and Unjust Enrichment

355. In the *Third NPRM* we proposed to use bidding credits for small businesses participating in LMDS auctions.[550] We tentatively concluded that affording such businesses bidding credits and installment payments constitutes the most cost-effective and efficient means of achieving Congress' objective of ensuring an opportunity for these designated entities to participate in the provision of LMDS while preserving the advantages of competitive open bidding. We proposed a bidding credit of 25 percent that would be available on one of the proposed spectrum blocks. To prevent unjust enrichment by small businesses transferring licenses acquired through the use of bidding credits, we proposed imposition of a payment requirement on transfers of such licenses to entities that are not owned by small businesses.

356. While M3ITC advocates a lottery to award LMDS licenses, it states in its comments that if the licenses are auctioned, the Commission must provide a ''significant bidding credit'' to allow small business entrepreneurs competing in the LMDS auctions to overcome the disparity of financial resources between major corporations and small business entrepreneurs.[551] Emc^3 advocates a 25 percent bidding credit.[552] CellularVision supports the Commission's proposal to adopt bidding credits and encourages the Commission to consider other regulatory measures, including a small business bidding credit higher than 25 percent.[553] ComTech supports rules restricting the transfer and assignment of licenses held by designated entities, but it argues that a designated entity should be able to sell or transfer its license without restriction after the seventh year of the license term.[554]

357. PTV suggests that the Commission offer a bidding credit to commercial entities that propose to set aside capacity for use by noncommercial educational entities at preferential

[550] *Third NPRM*, 11 FCC Rcd at 123-24 (para. 190).

[551] M3ITC Comments to *Third NPRM* at 6.

[552] Emc^3 Comments to *Third NPRM* at 7.

[553] CellularVision Reply Comments to *Third NPRM* at 37.

[554] ComTech Comments to *Third NPRM* at 8. *Cf.* CellularVision Comments to *Third NPRM* at 20.

rates.[555] Similarly, RioVision argues that designated entity provisions should be available to a commercial/educational partnership.[556] Bell Atlantic supports these proposals and acknowledges that the public can benefit from the distribution of noncommercial programming over LMDS.[557] It argues that if the Commission decides to accommodate noncommercial programming, it should do so through bidding credits as proposed by PTV.[558]

358. Based on the record before us, we adopt a 25 percent bidding credit for small businesses in LMDS auctions, and a 15 percent bidding credit for entities with average gross revenues of more than $40 million but not exceeding $75 million. Commenters who advocated higher credits offered no data upon which to base such credits. We decline to adopt the bidding credit proposed by PTV and Bell Atlantic for commercial entities that set aside part of their capacity for educational institutions at preferential rates. At this time, we do not believe that we have an adequate record regarding the legal and policy implications of such bidding credits.[559]

359. We believe it is appropriate to align our unjust enrichment rules for LMDS with our narrowband PCS and 900 MHz SMR unjust enrichment rules as they relate to bidding credits. These rules provide that, during the initial license term, licensees utilizing bidding credits and seeking to assign or transfer control of a license to an entity that does not meet the eligibility criteria for bidding credits will be required to reimburse the government for the total value of the benefit conferred by the government, that is, the amount of the bidding credit, plus interest at the rate imposed for installment financing at the time the license was awarded, before the transfer will be permitted.

360. The rules which we now adopt additionally provide that, if, within the original term, a licensee applies to assign or transfer control of a license to an entity that is eligible for a lower bidding credit, the difference between the bidding credit obtained by the assigning party and the bidding credit for which the acquiring party would qualify, plus interest at the rate imposed for installment financing at the time the license was awarded, must be paid to the United States Treasury as a condition of approval of the assignment or transfer. If a licensee that utilizes bidding credits seeks to make any change in ownership structure that would render the licensee ineligible for bidding credits, or eligible only for a lower bidding

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[555] PTV Comments to *Third NPRM* at 11-13.

[556] RioVision Comments to *Third NPRM* at 2.

[557] Bell Atlantic Reply Comments to *Third NPRM* at 8.

[558] *Id.*

[559] *But see* para. 306, *supra*.